Frequency and Risk Factors of Postpartum Hemorrhage Among Patients Visiting Rehman Medical Institute Hayatabad Peshawar

Fazia Raza[1], Shahida Rasheed[1], Saima Perveen[2], Sara Gul[1]

ABSTRACT

Background: Postpartum hemorrhage is one of the main causes of maternal mortality both in developed and developing countries. It showed strong relation with age, parity, chronic conditions, previous c-sections, drug use history, history of trauma/injury and blood disorders.

Objectives: This study was conducted to assess the frequency and risk factors of post partum hemmorhage among postnatal women visiting Rehman Medical Institute, Peshawar.

Materials & Methods: This cross-sectional study was conducted from June 2016 to May 2017, at Rehman Medical Institute Hayatabad Peshawar, in which 203 postnatal women of gynecological unit were selected, using strict inclusion and exclusion criteria. A structured questionnaire was used to collect relevant information regarding risk factors and post partum hemorrhage, after approval from the Institutional Ethical Review Committee.

Results: Our study results found that among the total study population (n=203); approximately 76.85% were below 40 years of age, 45.32% were anemic, 42.36% were primi-gravida, 22.17% had history of c-section, 34.48% had macrosomia, 50.25% were obese, 39.41% were hypertensive, and 32.51% had diabetes mellitus. Nearly 39.90% had previous history of post partum hemorrhage, 32.51% had history of excessive medication used for induction of labor, 19.70% were positive for HBV &/or HCV infection, 17.73% had multiple births, 33% had trauma, 41.87% uterine atony; 48.77% had infection, 38.92% had retained products of conception, and 12.32% had blood disorders.

Conclusion: From results, it was concluded that post partum hemorrhage occurred in, and showed significant relation with age, infections, multiple births, & macrosomia and thus women needs regular antenatal care to prevent post partum hemorrhage and complications.

***Key Words**: Post Partum Hemorrhage, Age, Macrosomia, Primi-Gravida, Blood Disorders, and Peshawar.*

This article may be cited as: Raza F, Rasheed S, Perveen S, Gul S Frequency and Risk Factors of Postpartum Hemorrhage Among Patients Visiting Rehman Medical Institute Hayatabad Peshawar JSMC 2018.8;2:133-137.

INTRODUCTION

Globally, maternal hemorrhage is the leading cause of preventable maternal death [1]. Obstetric hemorrhage is the single most significant cause of maternal mortality worldwide and causing approximately 25 to 30% of all maternal deaths [2]. It is a leading global cause of maternal morbidity and mortality [3]; and approximately 12 million women suffer postpartum hemorrhage. Majority of PPH related deaths occur in developing countries of the world where facilities are poor [4,5].

Globally, postpartum hemorrhage results in 39,000 to 78,000 deaths annually [1, 6, 7]. Although there have been significant improvements in maternal mortality due to improved access to health care services [5] but PPH is one of the top five causes of maternal mortality both in developed and developing countries [8]. Primary postpartum hemorrhage occurs during the first 24 hours after childbirth while secondary haemorrhage occurs after 24 hours to 4 weeks after delivery. Postpartum hemorrhage is the loss of more than 500 ml in vaginal and 1,000 ml of blood in c-section following birth [9].

The risk factors for post partum hemorrhage include primiparous women, obesity, previous PPH, multiple pregnancies [15, 16], anaemia, Pre-eclampsia, Diabetes, infections, large baby, placenta praevia, placental abruption, abnormally adherent placenta, age over 40 years, tocolytics, and general anesthesia [10, 11]. Intrapartum risk factors include induction of labor, excessive use of medication like prostaglandins and misoprostol prolonged labor, intrapartum pyrexia, placental abruption, episiotomy[17, 18], and delivery by caesarean section [1, 9, 19]. Women with pre-existing bleeding disorders and women taking therapeutic anticoagulants are at increased risk of PPH[20]. A critical feature of a massive hemorrhage in obstetrics is the development of disseminated intravascular coagulation (DIC) and coagulopathy[21 22].

1. Department of Gynae/Obs. RMI Hayat Abad Peshawar
2. Department of Gynae/Obs. SGTH, Swat

Correspondence:
Dr. Fazia Raza
Department of Gynae/Obs. RMI
Hayat Abad, Peshawar
Email: faziaraza@yahoo.com
Cell: 03459648867

Received: December 12th 2017, Accepted May 31st 2018

deaths associated with PPH occur in resource-poor settings where effective methods of prevention and treatment - such as oxytocin - are not accessible because many births still occur at home, or in community settings, far from a health facility[23].

Pakistan is a developing country and thus having high maternal mortality rates and ratios due to lack have maternal and child health services and family planning. The post partum hemorrhage is considered as the most important preventable cause of maternal morbidity and mortality, and thus this cross sectional study was formulated to find the frequency and to identify the risk factors of postpartum hemorrhage among the women visited gynecological unit, Rehman Medical Institute Hayatabad Peshawar so as to identify the women at risk and improve our clinical practices to prevent post partum hemorrhage.

MATERIAL AND METHODS

A cross-sectional study was conducted at Rehman Medical Institute, Hayatabad, Peshawar; from June 2015 to May 2017, in which a total of 203 postnatal women of gynecological unit were included to find the frequency and related risk factors of post partum hemorrhages, after taking approval from the Institutional Ethical Review Committee. All women with blood loss of more than 500ml after normal vaginal delivery were included in the study. Where as those who had less than 500 ml blood loss and not permanent residents of Peshawar were excluded from the study population, with an aim to reduce confounding. A structured questionnaire was used to collect relevant information regarding post partum hemorrhage and its risk factors. The data was exclusively used for the study purpose. High confidentiality and anonymity was met. Microsoft Word 2007 and SPSS 20 were used for statistical analysis. Data was presented in form of tables. Chi square test was used to show significant relation between post partum hemorrhage and different risk factors. The chi square test was applied as the data was stratified categorically into 2x2 tables according to the different variables. Finally, the chi square test value and p-value were calculated to identify any relation between post partum hemorrhage and its related risk factors.

RESULTS

Our study results found that, out of the total study population (n=203); approximately 76.85% (n=156) were below 40 years of age, while the remaining were above 40 years of age, as was shown in Table No 1.

The frequency of post partum hemorrhage among the study population n=203, was shown in Table No. 2. Among the study patients who had PPH; approximately 18.72% (n=38) were found anemic, 18.23% (n=23) were primi-gravida, 20.20% (n=41) had macrosomia, 17.24% (n=35) were obese, 14.78% (n=30) were hypertensive, 8.37% (n=17) had diabetes mellitus, 17.24% (n=35) had abnormal placental attachment, 19.70% (n=40) had infection, and 9.36% (n=19) had multiple births, as shown along with chi-square test value in Table No 3.

In our study, approximately 39.90% (n=81) had previous history of post partum hemorrhage, 32.51% (n=66) had history of excessive medication like prostaglandins and misoprostol used for induction of labor, 19.70% (n=40) were positive for HBV &/or HCV infection, 33% (n=67) had trauma, 41.87% (n=85) had uterine atony. Moreover among the PPH patients; nearly 19.70% (n=40) had retained products of conception, 12.32% (n=25) had blood disorders, and 8.37% (n=17) had previous history of c-section, as shown along with chi-square test value in table No 4.

Table No 1. Relationship Of Post Partum Hemorrhage With Age Groups Among Study Population (N=203) Visiting Rehman Medical Institute Hayatabad Peshawar

Age Group	PPH f (%)	No PPH f (%)	Total f (%)
< 20	7 (3.45)	12 (5.94)	19 (9.36)
20- 30	19 (9.36)	51 (25.12)	70 (34.48)
30 – 40	21 (10.34)	46 (22.66)	67 (33)
40 & Above	14 (6.9)	33 (16.26)	47 (23.15)
Total	61 (30.05)	142 (69.95)	203 (100)

Table No 2. Frequency of Post Partum Hemorrhage Among Study Population (n=203) Visiting Rehman Medical Institute Hayatabad Peshawar

Variable		Frequency	(%age)
Post Partum Hemorrhages	Yes	61	30.05
	No	142	69.95
Total		203	100.00

Table No 3. Relation Of Post Partum Hemorrhage With Different Variables Among Study Population (N=203) Visiting Rehman Medical Institute Hayatabad Peshawar

Variables	Response	PPH (%)	No PPH (%)	Total (%)	X^2 Test (P-Value)
Anemia	Yes	38 (18.72)	54 (26.6)	92 (45.32)	10.14 (0.0007)*
	No	23 (11.33)	88 (43.35)	111 (54.68)	
Obesity	Yes	35 (17.24)	67 (33)	102 (50.25)	1.774 (0.09) **
	No	26 (12.91)	75 (36.95)	101 (49.75)	
Hypertension	Yes	30 (14.78)	50 (24.63)	80 (39.41)	4.48 (0.03) *
	No	31 (15.27)	92 (45.32)	123 (60.59)	
Diabetes Mellitus	Yes	17 (8.37)	49 (24.14)	66 (32.51)	0.99 (0.159) **
	No	45 (22.17)	93 (45.81)	138 (67.98)	
Infection	Yes	40 (19.7)	59 (29.06)	99 (48.77)	9.85 (0.0008) *
	No	21 (10.34)	83 (40.89)	104 (51.23)	
Abnormal Placenta	Yes	35 (17.24)	54 (26.6)	89 (43.84)	6.48 (0.005) *
	No	26 (12.81)	88 (43.35)	114 (56.16)	
Primi gravid	Yes	37 (18.23)	49 (24.14)	86 (42.36)	11.95 (0.0002) *
	No	24 (11.82)	93 (45.81)	117 (57.64)	
Macrosomia	Yes	41 (20.2)	29 (14.29)	70 (34.48)	41.35 (< 0.0001) *
	No	20 (9.85)	113 (55.67)	133 (65.52)	
Multiple Births	Yes	19 (9.36)	17 (8.37)	36 (17.73)	10.75 (0.0005) *
	No	42 (20.69)	125 (61.58)	167 (82.27)	

* Significant Chi Square Test value and significant P-Value
** Non-significant Chi Square Test value and non- significant P-Value

TABLE No 4. Relation Of Post Partum Hemorrhage With Different Variables Among Study Population (n=203) Visiting Rehman Medical Institute Hayatabad Peshawar

Variable	Response	PPH (%)	No PPH (%)	Total (%)	X^2 Test (P-Value)
Previous history of PPH	**Yes**	35 (17.24)	46 (22.66)	81 (39.9)	11.11 (0.0004) *
	No	26 (12.81)	96 (47.29)	122 (60.1)	
History of trauma/ injury	**Yes**	38 (18.72)	29 (14.29)	67 (33)	33.83 (< 0.0001) *
	No	23 (11.33)	113 (55.67)	136 (67)	
Excessive medication used	**Yes**	27 (13.3)	39 (19.21)	66 (32.51)	5.48 (0.0009) *
	No	34 (16.75)	103 (50.74)	137 (67.49)	
Retained products of conceptions	**Yes**	40 (19.7)	39 (19.21)	79 (38.92)	26.07 (< 0.0001) *
	No	21 (10.34)	103 (50.74)	124 (61.08)	
Uterine Atony	**Yes**	42 (20.69)	43 (21.18)	85 (41.87)	26.08 (< 0.0001) *
	No	19 (9.36)	99 (48.77)	118 (58.13)	
Blood disorders	**Yes**	25 (12.32)	41 (20.2)	66 (32.51)	2.85 (0.06) **
	No	36 (17.73)	101 (49.75)	137 (67.49)	
Previous history of c-section	**Yes**	17 (8.37)	28 (13.79)	45 (22.17)	1.64 (0.1001) **
	No	44 (21.67)	114 (56.16)	158 (77.83)	
HBV &/or HCV	**Yes**	9 (4.43)	31 (15.27)	40 (19.7)	1.351 (0.1229) **
	No	52 (25.62)	111 (54.68)	163 (80.3)	

* Significant Chi Square Test value and significant P-Value
** Non-significant Chi Square Test value and non- significant P-Value

DISCUSSION

In our study the prevalence of post partum hemorrhage among women presented to Rehman medical institute was approximately 30%. The frequency of post partum hemorrhage among post natal women was 30.05% whereas in a study conducted in Africa showed the maximum prevalence of 27.5% [15]. Thus our study population had more prevalence as compared to international studies showing prevalence of 7.2% in Oceania in Africa (27.5%); and the global prevalence of 10.8% among postnatal women (Table No. 2) [15].

In our study the important risk factors responsible for post partum hemorrhage were: anemia, infection, multiple births, primi-gravida, abnormal placenta and hypertension; and showed significant P-Values of < 0.005 (Tables No. 3 & 4). In our study, post partum hemorrhage showed strong relation with previous history of C-sections, obesity[25,26], cardiac diseases[6], abnormal placentation and placenta previa as were revealed and supported by international studies[12, 14, 21].
In our study results, post partum hemorrhage showed strong relation with previous history, retained products of conception, uterine atony, excessive medication, and showed significant p-values of < 0.005 (Table No. 3 & 4); and these results were supported by international studies [5, 17, 27]. A study published in Lancet Journal in 2016, showed strong relation with bleeding disorders; showed 2.85 chi square test value with p-value of 0.06 and thus our study result findings were contradictory to the previous international studies findings [6, 11, 20].

Our study findings revealed strong positive relation with previous history of trauma/ injury with Chi Square significant value of 33.83 (p-value = < 0.005) as was revealed by an international study [24]. In our study results, macrosomia was found to have significant relation with post partum hemorrhage with chi square test value of 41.35; as were revealed in many international studies [10, 11]. Moreover, our study results supported the previous findings that post partum hemorrhage was related with multiple births (Table No. 3) [15, 16].

CONCLUSIONS

It was concluded that the post partum hemorrhage showed low prevalence among the women visited Rehman Medical Institution Hayatabad Peshawar; and showed significant relation with age, infections, multiple births, primi-gravida, abnormal placenta & macrosomia etc. Thus proper antenatal care with risk factors assessment is needed to prevent and properly manage post partum hemorrhage and its complications.

REFERENCES

1. Weeks A. The prevention and treatment of postpartum haemorrhage: what do we know, and where do we go to next?. BJOG: An International Journal of Obstetrics & Gynaecology. 2015 Jan 1;122(2):202-10.
2. Walfish M, Neuman A, Wlody D. Maternal haemorrhage. British Journal of Anaesthesia. 2009 Dec 1;103(suppl_1):i47-56.
3. Bohlmann MK, Rath W. Medical prevention and treatment of postpartum hemorrhage: a comparison of different guidelines. Archives of gynecology and obstetrics. 2014 Mar 1;289(3):555-67.
4. Green KI, Ojule JD, Faith MC. Primary postpartum haemorrhage at the university of Port Harcourt teaching hospital: Prevalence and risk factors. Nigerian Health Journal. 2015;15(3):111-7.
5. Smith HJ, Colvin CJ, Richards E, Roberson J, Sharma G, Thapa K, Gülmezoglu AM. Programmes for advance distribution of misoprostol to prevent post-partum haemorrhage: a rapid literature review of factors affecting implementation. Health policy and planning. 2015 Mar 21;31(1):102-13.
6. Vos T, Allen C, Arora M, Barber RM, Bhutta ZA, Brown A, Carter A, Casey DC, Charlson FJ, Chen AZ, Coggeshall M. Global, regional, and national incidence, prevalence, and years lived with disability for 310 diseases and injuries, 19902015: a systematic analysis for the Global Burden of Disease Study 2015. The Lancet. 2016 Oct 8;388(10053):1545-602.
7. Abubakar II, Tillmann T, Banerjee A. Global, regional, and national age-sex specific all-cause and cause-specific mortality for 240 causes of death, 1990-2013: a systematic analysis for the Global Burden of Disease Study 2013. Lancet. 2015 Jan 10;385(9963):117-71.
8. Prick BW, Duvekot JJ, Van Rhenen DJ, Jansen AJ. Transfusion triggers in patients with postpartum haemorrhage. ISBT Science Series. 2016 Jan 1;11(S1):220-27.
9. Raghavan S, Abbas D, Winikoff B. Misoprostol for prevention and treatment of postpartum hemorrhage: What do we know? What is next?. International Journal of Gynecology & Obstetrics. 2012 Oct 31;119:S35-8.
10. Magann EF, Evans S, Hutchinson M, Collins R, Lanneau G, Morrison JC. Postpartum hemorrhage after cesarean delivery: an analysis of risk factors. Southern medical journal. 2005 Jul 1;98(7):681-86.
11. Dildy GA. Postpartum haemorrhage: new management options , Clin Obstet Gynecol , 2002, vol. 45 (pg. 330-44).
12. Bauer ST, Bonanno C. Abnormal placentation. InSeminars in perinatology 2009 Apr 30 (Vol. 33, No. 2, pp. 88-96). WB Saunders.

13. Vinograd A, Wainstock T, Mazor M, Mastrolia SA, Beer-Weisel R, Klaitman V, Dukler D, Hamou B, Benshalom-Tirosh N, Vinograd O, Erez O. A prior placenta accreta is an independent risk factor for post-partum hemorrhage in subsequent gestations. European Journal of Obstetrics & Gynecology and Reproductive Biology. 2015Apr 30;187:20-24.
14. Glaze S, Ekwalanga P, Roberts G, Lange I, Birch C, Rosengarten A, Jarrell J, Ross S. Peripartum hysterectomy: 1999 to 2006. Obstetrics & Gynecology. 2008 Mar 1;111(3):732-38.
15. Calvert C, Thomas SL, Ronsmans C, Wagner KS, Adler AJ, Filippi V. Identifying regional variation in the prevalence of postpartum haemorrhage: a systematic review and meta-analysis. PloS one. 2012 Jul 23;7(7):e411-14.
16. Tort J, Rozenberg P, Traoré M, Fournier P, Dumont A. Factors associated with postpartum hemorrhage maternal death in referral hospitals in Senegal and Mali: a cross-sectional epidemiological survey. BMC pregnancy and childbirth. 2015 Sep 30;15(1):235.
17. Sheiner E, Sarid L, Levy A, Seidman DS, Hallak M. Obstetric risk factors and outcome of pregnancies complicated with early postpartum hemorrhage: a population-based study. The Journal of Maternal-Fetal & Neonatal Medicine. 2005 Jan 1;18(3):149-54.
18. Sosa CG, Althabe F, Belizán JM, Buekens P. Risk factors for postpartum hemorrhage in vaginal deliveries in a Latin-American population. Obstetrics and gynecology. 2009 Jun;113(6):1313.
19. Poston L, Caleyachetty R, Cnattingius S, Corvalán C, Uauy R, Herring S, Gillman MW. Preconceptional and maternal obesity: epidemiology and health consequences. The Lancet Diabetes & Endocrinology. 2016 Dec 31;4(12):1025-36.
20. World Health Organization. WHO recommendatioins for the prevention and treatment or postpartum haemorrhage: evidence base.
21. McLintock C, James AH. Obstetric hemorrhage. Journal of thrombosis and Haemostasis. 2011 Aug 1;9(8):1441-51.
22. Ghosh M, Chandraharan E. Management of post-partum haemorrhage. Obstetrics, Gynaecology & Reproductive Medicine. 2017 Aug 1;27(8):239-44.
23. Pantoja T, Abalos E, Chapman E, Vera C, Serrano VP. Oxytocin for preventing postpartum haemorrhage (PPH) in non-facility birth settings. Cochrane Database of Systematic Reviews. 2015 Jan 1(2).
24. Oyelese Y, Ananth CV. Postpartum hemorrhage: epidemiology, risk factors, and causes. Clinical obstetrics and gynecology. 2010 Mar 1;53(1):147-56.
25. *Shakur, Haleema; Roberts, Ian; Fawole, Bukola. "Effect of early tranexamic acid administration on mortality, hysterectomy, and other morbidities in women with post-partum haemorrhage (WOMAN): an international, randomised, double-blind, placebo-controlled trial".* The Lancet. 2017 Jun 2;389(10084):2105-16.
26. Kramer MS, Dahhou M, Vallerand D, Liston R, Joseph KS. Risk factors for postpartum hemorrhage: can we explain the recent temporal increase?. Journal of Obstetrics and Gynaecology Canada. 2011 Aug 1;33(8):810-19.
27. Ducloy-Bouthors AS, Susen S, Wong CA, Butwick A, Vallet B, Lockhart E. Medical advances in the treatment of postpartum hemorrhage. Anesthesia & Analgesia. 2014 Nov 1;119(5):1140-47.